

Memorandum

To : Marley Hart, Executive Officer
Occupational Safety and Health Standards Board
2520 Venture Oaks Way, Suite 350
Sacramento, CA 95833

Date: May 17, 2013

RECEIVED

From : Ellen Widess, Chief *E. Widess*
Division of Occupational Safety and Health

MAY 22 2013

OCCUPATIONAL SAFETY AND HEALTH
STANDARDS BOARD

Subject: Division Evaluation of Petition
Rob Frashetski, Petition File No.533

This memorandum is written in response to the petition received by the Occupational Safety and Health Standards Board (Board) on March 25, 2013, regarding the application Rob Frashetski to revise section 8425(j) the Tunnel Safety Orders to specify additional standards for underground refuge chambers.

The Petitioner requests that the Tunnel Safety Orders specify an occupancy capacity for entrapment duration, quantity primary life support compressed air per person, means of maintaining positive pressure in the chamber, secondary air supplies, means of removing carbon dioxide and carbon monoxide, cooling and dehumidifying chamber air and chamber air monitoring equipment.

Existing Standards

Existing Title 8, section 8425(j) requires that "A refuge chamber or alternate escape route shall be maintained within 5,000 feet of the face of a tunnel classified as gassy or extra-hazardous. Workers shall be provided with emergency rescue equipment and trained in its use. Refuge chambers shall be equipped with a compressed air supply, a telephone, and means of isolating the chamber from the tunnel atmosphere. The emergency equipment, air supply, and rescue chamber installation shall be acceptable to the Division."

Federal and Other Standards

The International Tunneling and Underground Space Association (ITA) has adopted the recommendations. The Federal OSHA standard for underground construction, 1926.800 only requires that underground structures be fire resistant and workers have a safe means of egress. The Title 8 Mine Safety Orders and the Federal Mine Safety standards have more specific underground refuge chamber standards but are not applicable to underground tunnel construction.

Discussion:

Since 1972, after the disastrous Sylmar Tunnel explosion killed 17 miners, California has rigorously enforced standards designed to prevent tunnel fires and explosions. We require metal ventilation lines, which stand up much longer in a tunnel fire. We require a minimum of 60 feet-per-minute air flow velocity at all times, which keeps flammable vapor concentrations to a minimum. When a Gassy or Extrahazardous tunnel exceeds 5000 feet in length, either a second exit (usually a shaft) or a refuge chamber is required. Additional regulations limit the use of flammable liquids and combustible materials. The petitioner is recommending adding additional minimum requirements for a refuge chamber, and increasing the circumstances in which such a chamber would be required.

May 17, 2013

Conclusion:

The Division believes that this petition should be granted to the extent of being referred an advisory committee.

cc: Larry McCune, SSE
Patrick Bell, PSE
Deborah Gold
Suzanne Marria